

15¢

\$5.50 A YEAR

December 25, 1954

INDEX

VOL. 65, NO. 26 PAGES 401-412

SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Buried Past

See Page 403

A SCIENCE SERVICE PUBLICATION

MEDICINE

Human Semen Banks

Iowa scientists suggest this application of their finding that human semen can be frozen and stored, then later used for artificial insemination.

► FROZEN HUMAN semen banks can take their place with blood, bone, nerve and artery banks, it now appears from the success of one established experimentally at the State University of Iowa in Iowa City.

The Iowa frozen human semen bank is probably the first of its kind anywhere in the world. The scientists who have created it let its existence be known in a roundabout way through a report in the journal of the American Society for the Study of Sterility, *Fertility and Sterility* (Nov.-Dec.).

Three normal human babies, a boy and two girls, have already been born and a fourth is almost ready to be born, fathered by human semen frozen and stored by the Iowa scientists, Drs. R. G. Bunge, W. C. Keettel and J. K. Sherman. (See SNL, Nov. 7, 1953, p. 292.)

"The establishment of a semen bank" is one of the "clinical applications" they report for the semen freezing-and-storing method.

The four couples who have been helped to parenthood by the frozen semen may draw on the unique bank again. The scientists state that they have been storing semen "in anticipation of insemination for a second child," and one couple has already expressed a desire for a second child.

The frozen stored semen was used for artificial insemination of the mothers and the resulting babies are, in a sense, test tube babies. Although Dr. Bunge and as-

sociates have refused to state the source of the semen used so far, the technical report suggests that it was from the husbands.

"Collection, freezing, storage and concentration of a husband's semen is possible," states the technical report.

"Greater fertility potential than the husband's acting alone can be exerted at the most favorable time (of the woman's cycle)," the scientists point out. This would apply in cases where the sperm count is normal or even low.

A new criterion for evaluating the fertility potential of a given male may come from the study. Poor survival of spermatozoa after freezing might show that the spermatozoa were inferior or defective.

Male hormone treatment might be effective in such cases. The Iowa scientists state that in several cases pregnancies occurred after testosterone (male hormone) treatment of the man, even though spermatozoa counts only attained the pretreatment level. This suggests a difference in quality of sperm after treatment.

The semen being stored for possible insemination for a second child has been that from the "qualitative phase" when, presumably, the sperm cells, even if few, were of good quality.

The semen is concentrated and treated with glycerol prior to freezing.

Science News Letter, December 25, 1954

CLIMATOLOGY

Predict New Ice Age

► A NEW Ice Age may bury cities like Chicago, Berlin or Moscow under a thousand feet of ice within the next 10,000 years, Dr. Cesare Emiliani, University of Chicago geologist, predicted in Chicago.

Dr. Emiliani, research associate at the University's Institute for Nuclear Studies, based his prediction of a coming glacial age on the pattern of past variations in the earth's temperature. These long-age temperatures are indicated by measurements of the ratios of two forms of oxygen in the shells of fossil microorganisms found in deep-sea sediments.

The oxygen-ratio method was developed in 1947 by Nobel Prize winner Dr. Harold C. Urey, also of the University of Chicago. It has already shown that the ratio of oxygen 16 to oxygen 18 varies with the temperature of the water in which the tiny sea creatures lived.

His studies, Dr. Emiliani reported to a seminar of the American Meteorological So-

ciety in Chicago, show that the earth is getting colder. The temperature of the oceans has dropped about 14 degrees in the last 30,000,000 years, he concludes.

It has long been known that at least four successive ice ages, with intervening warmer periods, have swept over the earth. These large-scale temperature fluctuations, however, were very irregular and some meteorologists doubt that reliable predictions of future climate can be based on extrapolation from past records.

Most weathermen agree that there has been a definite warming-up of the earth during the past 50 years or so, although they disagree as to its cause. And they have no estimate as to how long the warming-up period will last.

Since the geological record of when the ice ages swept over the continents is incomplete, scientists have turned to an examination of deep-sea sediments for a record of the last 1,000,000 years or so. The samples

are obtained by cutting cores from the ocean's bottom. These sediments may reach back in time more than 2,000,000 years.

Studies of the tiny fossil sea creatures found in the cores have shown that the surface temperature of the sea varied several degrees Fahrenheit in the last 1,000,000 years, Dr. Emiliani said, in separate periods of about 40,000 years. The coldest points in these periods corresponded to the glacial ages.

During the ice ages, vast areas of North America, Europe and northern Asia were covered with thick layers of ice. In the warmer interglacial periods, the ice melted away.

Science News Letter, December 25, 1954

MEDICINE

Leg-Lifting Test to Tell Gangrene Outcome

► A LEG-LIFTING test to help determine need for and probable outcome of amputation in cases of gangrene was described by Dr. Rutherford S. Gilfillan of the University of California School of Medicine, San Francisco, at the meeting of the American Academy of Dermatology and Syphilology in Chicago.

The test should be helpful not only in cases of gangrene, but also in treating lack of circulation in such diseases as arteriosclerosis and Buerger's disease.

The test consists of elevating the foot or leg above the level of the heart when the patient is lying down flat on his back, then measuring the height of the foot or leg above the heart at the point where natural skin color is maintained.

This enables a doctor to approximate easily the capillary pressure in the extremity, and relate this approximation of pressure to the survival possibilities of cells in these areas of the leg and foot.

Previous methods have been difficult to perform, Dr. Gilfillan said, and were not, therefore, generally used.

Science News Letter, December 25, 1954

ASTRONOMY

Spot New Asteroid In Southeastern Sky

► A NEW asteroid has been discovered low in the southeastern sky by Dr. George Abell of Mt. Wilson and Palomar Observatories.

The object's magnitude is 17, much too faint to be seen except with the largest telescopes. The asteroid, which, at some future date, will be named by its discoverer in accordance with international custom, was found in the constellation of Canis Major, the larger dog.

Its distance from the earth will not be known until more observations are made on the object. For that reason, Harvard College Observatory is notifying other observatories around the country of the discovery.

Science News Letter, December 25, 1954

GENERAL SCIENCE

Security Program Changes

Board of Directors of American Association for the Advancement of Science, in unprecedented statement, calls for emphasis on positive achievement for national security.

► A NEW idea for strengthening our national security, positive achievement rather than the negative bottling up of secrets, is urged in *Science* (Dec. 10) by the Board of Directors of the American Association for the Advancement of Science.

The statement was the first official one ever made on this country's security procedures by the giant scientific organization. Over 256 scientific societies are affiliated with the AAAS, as it is known, and their membership is estimated at over 2,000,000.

Grave concern for national security caused issuance of the unprecedented statement. The strength of the United States, the AAAS board said, can be "enhanced by changing our basic concept of internal security from one that attempts almost exclusively to minimize our losses to one that places greatly increased emphasis on maximizing our gains."

Guarding the nation from internal subversion by screening government employees and persons having access to classified information is "necessary, but it poses a serious dilemma," the statement said.

That dilemma is:

"The more completely we succeed in reducing the danger that information now in our possession may leak to a potential enemy, the more risk we run of interfering with scientific progress and of reducing the technologic superiority and the moral and physical strength upon which victory in the ultimate test would depend."

There are four points basic to the nation's security program, the AAAS said:

1. A security-screening program combating infiltration by enemy agents, espionage and sabotage, and the communication of classified information to unauthorized persons.

2. Examining the character of persons likely to be entrusted with vital information beyond a determination of loyalty to that of security risk.

3. Putting the welfare of the nation ahead of the interests of an individual or the welfare of a particular group by comprehensive policies impartially applied, even though the intimate dependence of military strength upon scientific progress means that security-screening affects scientists more than it does most people.

4. Security-screening programs are a means to an end, not an end in themselves. Their purpose is to keep a potential enemy from learning facts about our armed might or our weapons, but such programs do not increase the size of that force nor create new weapons.

This fourth point, the AAAS urged,

should be given much more serious consideration than the other three, which have been widely discussed.

The degree of secrecy, the conditions under which secrecy is desirable and the risk of losing secrecy should be considered in terms of "their contribution to the development and maintenance of the military, industrial and moral strength which are our ultimate protection against effective attack."

Historically, the AAAS pointed out, secrecy in defense has applied to military plans and equipment, properly to keep such information out of military hands.

Scientific knowledge, however, cannot be kept secret by the "security practices that serve to safeguard military information."

Progress in science is a cumulative process in which each scientist builds upon what is already known, adding to it through research and intellectual effort. This process simply cannot be contained by national boundaries and security systems, the AAAS statement said.

Scientific knowledge will continue to grow as long as men are curious about the world around them. Security precautions may sometimes give a slight time advantage to one nation, but the basic fact is that there are "no such things as permanent scientific secrets."

When this is recognized, the whole picture of how to keep the nation strong changes.

"Clearly," the AAAS stated, "the security of the nation requires the most favorable circumstances for the advancement of science, an environment that will foster a healthier, more imaginative, more energetic development than that which serves the enemies of freedom."

A positive program for preserving national security should be substituted for the present negative one. Ask these questions, the AAAS urged:

"How can we best aid national progress?" instead of "How can we avoid the danger of leaks?"

"How can we maximize our gains?" not "How can we minimize our losses?"

"What risk of delayed progress or diminished achievement is incurred in not employing this person?" rather than "What security risk is incurred in employing him?"

Such phrasing of questions weighed when considering an individual's security status, the AAAS said, would give our country a positive program for strengthening the nation.

The AAAS statement concludes:

"A positive program of security can be



MAYAPAN INCENSE BURNER—
Copal, a resinous incense, was burned in these vessels, made in effigy of the gods, which appeared late in the history of Mayapan. (See SNL, Dec. 18, p. 388.) This old man is probably Mayan God D, a sky god.

developed. It requires boldness; it demands continued belief in the fundamental loyalty of American scientists, engineers and industrialists and in their ability to keep the United States ahead of potential enemies. It would foster the development and effective use of the resources of knowledge, talent and enthusiasm which can keep us ahead. Such a program would strengthen the democratic spirit of freedom and of progress which is the hope of the free world."

Science News Letter, December 25, 1954

PALEONTOLOGY

Fossil Beds Found In Oregon Mountain

See Front Cover

► FOSSIL BEDS found at the bottom of the mountain at John Day River, Ore., can be seen in the photograph on the cover of this week's *SCIENCE NEWS LETTER*.

Camels, tapirs, rhinoceros and other types of animals now inhabiting Africa and Asia are represented. The layers of sediment were deposited about 30,000,000 years ago.

Fossils as old as 360,000,000 years can still be analyzed for their amino acids, which were discovered to be identical, in many cases, to those from living animals by Dr. Philip H. Abelson, director of the geophysical laboratory of Carnegie Institution of Washington. (See SNL, Dec. 18, p. 388.)

Science News Letter, December 25, 1954

OPHTHALMOLOGY

Clue to Personality

► **THE WAY** your eye scans this story reflects the type of person you are.

If you read each word carefully and stop to look again, you tend to be a perfectionist or a scientific person. If your eye movements are irregular and you read too fast with little comprehension, you might be high-strung, under pressure, or even neurotic. The well-adjusted person reads comprehensibly at a good rate of speed. He might miss one or two words in a phrase but he gets the important facts.

This new theory of judging people's personality from results of an eye graph is advanced by Hilda Widener Yoder, director of the Reading Clinic, Institute of Ophthalmology, Columbia-Presbyterian Medical Center, New York.

The number of eye pauses, fixations and regressions are some of the many eye habits recorded photographically by the ophthalmograph.

With new ways of measuring reading skills, our current intelligence tests may not be valid, stated Mrs. Yoder, director of Yoder Reading Improvement Center, New York.

"A person's reading success is determined by factors other than intelligence," she said. "Visual perception, for instance, or auditory discrimination, or emotional factors are better indicators of reading success than an I.Q. score."

Americans are poor readers. Basic reading instruction usually ends after the third grade, and children are left to their own reading devices. Most people today are little better than sixth grade readers, Mrs. Yoder states.

Surveys show that 90% of our college graduates read two to five times slower than a competent reader, and lower school graduates read ten times slower.

Reading is the last of the three R's to be streamlined. In the past 50 years, shorthand and typing have speeded up writing, and many machines have carried arithmetic into modern living tempos. Today's average reader, however, still plods along in horse-and-buggy style.

Reading is an acquired skill, reports Mrs. Yoder. You can be trained to note key words such as subjects, verbs and negative words; to "switch gears" to match the material you read; to read ideas instead of words; to read beginning and ending paragraphs.

By using these principles, in 20 weeks of careful study you can double your speed of reading business or professional letters, pamphlets, reports.

Reading skill as measured in time, understanding, and absorption, has been increased from 2% to 500%, even among college graduates.

Science News Letter, December 25, 1954

includes coronary artery disease, remained at about the same level in the two past years. The death record from diabetes in 1954 was somewhat lower than in 1953."

The fatal accident situation in our country improved somewhat during the year, decreases in death rates being recorded for motor vehicle accidents, home accidents, and occupational accidents. On the other hand, the homicide rate rose somewhat and suicides remained at about the same level as a year ago.

Both infant mortality and maternal mortality continued to decline to new low levels.

Science News Letter, December 23, 1954

SCIENCE NEWS LETTER

VOL. 66 DECEMBER 25, 1954 NO. 26

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N. St., N. W., Washington 6, D. C., North 7-2255. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

Copyright, 1954, by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicate services issued by Science Service. Science Service also publishes CHEMISTRY (monthly) and THINGS of Science (monthly).

Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C., under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 3440, P. L. and R., 1948 Edition, paragraph (d) (act of February 26, 1925, 39 U. S. Code 283), authorized February 28, 1950. Established in mimeographed form March 18, 1922. Title registered as trademark. U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 1 E. 54th St., New York 22, Eldorado 5-5666, and 435 N. Michigan Ave., Chicago 11, Superior 7-6048.

SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: Karl Lark-Moravitz, Purdue University; Kirtley F. Mather, Harvard University; Paul B. Sears, Yale University. Nominated by the National Academy of Sciences: Homer W. Smith, New York University; Edward U. Condon, Corning Glass Works; Harlow Shapley, Harvard College Observatory. Nominated by the National Research Council: Duane Roller, American Association for the Advancement of Science; Ross G. Harrison, Yale University; Leonard Carmichael, Smithsonian Institution. Nominated by the Journalistic Profession: Neil H. Swanson, Baltimore, Md.; O. W. Riegel, Washington and Lee University; Michael A. Gorman, Flint Journal. Nominated by the Scripps Estate: Charles E. Scripps, Cincinnati, Ohio; Edward J. Meeman, Memphis Press-Scimitar; John T. O'Rourke, Washington Daily News.

Officers—President: Leonard Carmichael; Vice President and Chairman of Executive Committee: Charles E. Scripps; Treasurer: O. W. Riegel; Secretary: Watson Davis.

Staff—Director: Watson Davis. Writers: Jane Stafford, Marjorie Van de Water, Ann Ewing, Howard Simons. Science Clubs of America: Joseph H. Krous, Margaret E. Patterson. Photography: Fremont Davis. Sales and Advertising: Nellie Jenkins. Production: Priscilla Howe. Interlingua Division in New York: Alexander Gode, Hugh E. Blair, 80 E. 11th St., Gramercy 3-5410.

VITAL STATISTICS

Good Health in 1955

► **GOOD HEALTH** for the nation in 1955 is foreseen by statisticians of the Metropolitan Life Insurance Company in New York.

The predicted healthy '55 will follow a year in which "the health of the American people has been the best on record."

In 1954, the national death rate has dropped to an all-time low of 9.2 per 1,000 population, or five percent under the previous low point registered the year before, the statisticians report. The country has now experienced death rates below 10 per 1,000 for seven years in succession.

The unusually favorable mortality in 1954, which is based on the experience for the first 11 months, reflected in part an absence of any major outbreaks of respiratory disease.

"Noteworthy also is the fact that in 1954 the death rate from tuberculosis fell to about 10 per 100,000 population," the statisticians point out. "Thus in a single year mortality from tuberculosis was reduced by approximately 20%. As recently as 1951, tuberculosis mortality in the United States was twice as high as it was in 1954."

"Exceptionally favorable also was the record for influenza and pneumonia. The death rate from these causes was only about

25 per 100,000 in 1954, or one fourth less than the rate for the preceding year, the early months of which had seen an outbreak of influenza.

"The death rate from poliomyelitis in 1954 was about the same as in 1953, although there was a rise in the number of cases this year. It is estimated that there will be almost 39,000 cases of poliomyelitis during 1954, compared with about 36,000 in 1953. The results of the large scale immunization with the new vaccine for the prevention of poliomyelitis still remain to be evaluated."

The reported number of cases of measles and of whooping cough during 1954 was about 50% greater than in the year before. However, deaths from these conditions, as well as from scarlet fever and diphtheria, remained at a very low level during the year, according to the statisticians.

"There have been no significant changes in the death rate from the major chronic diseases," the statisticians point out. "The cancer mortality for 1954 was practically unchanged from the year before, while the death rate from cardiovascular-renal conditions showed a small reduction. Mortality from arteriosclerotic heart disease, which



GULL SOUNDS ALARM—To obtain the "alarm call" of sea gulls, Beverley Cox is shown here holding one of the birds. The other gulls, upon seeing a gull in such trouble, will sound their "alarm calls," which can then be used to frighten the birds from perches where they are undesirable.

ORNITHOLOGY

War on Sea Gulls

► SEA GULLS, long a hazard to conventional aircraft, and more recently to Air Force jets, may soon be frightened away from airfields along the coasts of the United States with tape recordings of their own "alarm calls."

Dr. Hubert W. Frings, professor of zoology at Pennsylvania State University and the scientist responsible for a similar weapon now used against starlings, has discovered that herring gulls give forth an alarm call that scares off other herring gulls.

This newest sound warfare against birds is the result of a study conducted this summer at the Mt. Desert Island Biological Laboratory near Bar Harbor, Maine, under the sponsorship of the U. S. Air Force.

Sea gulls have been the cause of numerous accidents by inadvertently smashing into airplane windshields. With the arrival of jet aircraft, sea gulls present an added danger of being sucked into the forward induction vents, causing a jet to explode.

Sea gulls are protected from physical harm by law and, therefore, other means of driving them from an area had to be found.

Dr. Frings attacked the sea gull problem in much the same manner as the starling problem. Starlings, when held, let out a distress call, the tape recording of which will frighten away other starlings.

The sea gulls, however, remain calm, cool and collected when captured and literally "won't talk." Other sea gulls, however, seeing a member of their group in trouble, do

get excited and sound off with an "alarm call."

After recording the alarm call made by other birds seeing a captured sea gull, Dr. Frings beamed the tape recording to gulls feeding on dumps along the coast.

He was successful in driving the birds away from the dumps as well as away from sardine canneries, which are plagued by the gulls that eat the by-products normally sold for conversion into fertilizer and other products.

It is also hoped that the tape recording and loudspeaker weapons will prove valuable to the sardine fishermen themselves, who suffer serious losses from sea gull raids on their catches.

During the study, Dr. Frings was able to classify five different sea gull calls and, in addition, learn about the bird's ability to find food.

Although the alarm call may be most important to the aircraft and fishing industries, the food-finding call is most important to the sea gull. When food is located, most gulls will call out to their neighbors. However, it was noted that if one gull discovers only a limited amount of food, he may remain silent.

The gull also has a trumpeting call, a feeding call and a call that sounds like the clucking of a chicken.

Experiments in the feeding habits of the birds disclosed that a stone, shaped like a fish, would not attract the gulls, but that

an artificial fish made of aluminum foil would.

Fish wrapped in paper and placed on the beach went untouched.

Dr. Frings concluded that the gulls keep the shore line under surveillance at all times and the reflections from any shiny objects, especially the scales of a fish, attract immediate attention.

When located, if the scouts approve of the food supply, they will fly in a "figure eight" pattern over the water or call other gulls with the food-finding call.

Dr. Frings was assisted in his study by his wife, Mable, and two graduate students from the University of Oklahoma, Beverley Cox and Lorraine Peissner.

Science News Letter, December 25, 1954

TECHNOLOGY

Dried Snap Beans Developed for Army

► THE ARMY will soon add to its menu a dehydrated snap bean that food technologists at Oregon State College claim is nine-tenths lighter and three-fourths smaller than canned or frozen beans.

Developed especially for the Army, the dried beans were produced by a combination of freezing and circulated heated air. Moisture in the beans, the technologists state, was reduced from 89% to less than three percent. The snap beans are restored to the natural size by boiling.

Science News Letter, December 25, 1954

MEDICINE

Find Connection Between Joint and Nail Diseases

► A DISCOVERY that explains for the first time the connection between diseases of the joints and diseases of the nails was announced by Drs. Barton L. Lewis and Hamilton Montgomery of the Mayo Foundation and Mayo Clinic, Rochester, Minn., at the meeting of the American Academy of Dermatology and Syphilology in Chicago.

The discovery is of a connection in the unborn baby between the site of generation of the nail and the last, or end, joint of the finger.

"For example," the doctors pointed out, "peculiarly characteristic changes in the nails occur when arthritis is present. A peculiar arrangement of the developing layers of the nail was found, which explains why inflammations within the cuticle (epidermis, or outer layer of skin) about the nail will cause abnormalities of the nail. Characteristic changes occurred in some nails in older individuals."

The finding came through a newly developed method for making complete microscopic studies of finger nails and toe nails. First sign of activity where the nail will grow in an embryo, the doctors have discovered, appears at two and a half months after conception.

Science News Letter, December 25, 1954

MEDICINE

Avoiding Heat Stroke

Summer health hints may sound out of season now, but if overweight is your problem, start reducing now in order to be less subject to heat stroke.

► A NEW kind of milk, when to use and when not to use penicillin, prevention of strep. infections and influenza in the Navy, and some health hints for next summer's heat waves were discussed at the meeting in Washington of the Association of Military Surgeons of the United States.

The summer health hints are not as far out of season as you might think. For example, if you are overweight, you may need to start reducing now, so that by next summer you will have the slim body that is less subject to heat stroke.

Of 20 cases of heat injury in nine Army camps last summer, seven were overweight according to Army standards for officers, and the trainee who died of heat stroke was 59 pounds overweight, Maj. Edgar L. Cook of the Army Chemical Center, Md., reported.

The new milk is a three-to-one concentrate of whole milk developed to solve the Army's problem of furnishing high quality fresh milk to installations remote from adequate milk supplies. In a full-scale field study, this milk was shipped from Wisconsin to Texas, reconstituted at a pasteurization plant in the El Paso vicinity and served at nearby Fort Bliss.

Consumers there could not tell the difference between the dairy reconstituted milk and whole pasteurized milk, Lt. Col. Robert G. McCall of the Army Environmental Health Laboratory, Army Chemical Center, Md., reported.

Penicillin should not be given to uncon-

scious patients or others unable to give an adequate history, Dr. Monroe J. Romansky of George Washington University Hospital, Washington, warned the military medical men.

This is to avoid the danger of reactions in patients who may be sensitive to the famous mold drug. Persons who are sensitive to it should know this and carry identification with this information, Dr. Romansky said.

Erythromycin, one of the newer antibiotics, is just as good as penicillin with the added advantage of being effective against germs which are resistant to penicillin. It has no side reactions, and Dr. Romansky's report suggested that it might be used instead of penicillin in many cases.

Influenza vaccines of the proper composition will reduce the number of cases of influenza in Naval Training Stations and epidemic strep. infections in the same installations can be controlled "to a very great degree by the intelligent use" of penicillin pills, Comdr. John R. Seal of the Navy's Bureau of Medicine and Surgery reported from six years of observation at the Naval Training Center at Great Lakes, Ill.

The streptococcus control, however, is handicapped by the fact that recruits often try to avoid taking the pills and the line petty officers in charge of the prophylaxis program are not sufficiently willing to take responsibility for seeing that the men take their pills every day for long periods.

Science News Letter, December 25, 1954

PLANT PATHOLOGY

Disease Plaguing Holly

► GROWERS OF English holly in the Pacific Northwest received an unexpected scientific Christmas present with the identification of a leaf and twig disease that has been plaguing their commercial plantings.

Ivan Buddenhagen and Roy Young, plant pathologists at Oregon State College, played Santa Claus when they discovered that the disease that has denuded as much as 80% of the coastal orchards is a fungus of the *Phytophthora* group. It is hoped that the identification of the disease will speed the finding of a control measure.

The disease results in black leaf-spotting, the Oregon scientists report in *Oregon's Agricultural Progress* (Fall), beginning in the lower part of the tree in late fall and spreading upward in the winter. The twigs are soon infected and killed. Young holly

plants are also attacked and the fungus-caused leaf drop may kill them. The disease is spread chiefly by spores carried by splashing rain drops.

Conservationists have long asked the American public to buy only the English holly at Christmastime, because the American native holly is in danger of being hunted almost out of existence.

The pathologists are currently experimenting with fungicides to try and control the new disease, but as stop-gap measures, they recommend that new trees be planted on moderately open sites, where the wind will circulate; that the trees be spaced and pruned to permit good air movement; that a fungicide be applied as a precaution when fall's cool, rainy weather starts, and that diseased leaves not be shipped.

Science News Letter, December 25, 1954

• RADIO

Saturday, Jan. 1, 1955, 5:00-5:15 p.m., EST

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

ENGINEERING

Endurance Machine Tests Railroad Ball Bearings

► RAILROAD ENGINEERS can now find out in a few days what will happen to their newly designed ball bearings, axles and lubricants after years of all-weather service.

A machine being installed in the Research Center of the Association of American Railroads, Chicago, can produce the combined long-term effects of load, speed, lubricants and temperature on wheel actions.

Science News Letter, December 25, 1954

MEDICINE

Urge Legal Reforms To Aid Epileptics

► STATE LAWS governing motor vehicle licenses, workmen's compensation, marriage and eugenic sterilization should be brought up-to-date in their application to victims of epilepsy, a committee of the American League Against Epilepsy has urged in New York.

The committee, under the chairmanship of Dr. Howard D. Fabing of Cincinnati, had as its legal adviser Dr. Roscoe L. Barrow, dean of the college of law of the University of Cincinnati.

Some of the outmoded laws, the committee pointed out, "prohibit the marriage of epileptics, require their sterilization, limit their employment opportunities and their right to operate motor vehicles."

"These laws are in part responsible for the profound economic deprivation and moral despair of one out of a hundred American citizens."

"Proposals for the revision of these laws are being made on the basis of a two-year study conducted by Dr. Barrow and medical authorities in the field of epilepsy. These laws were promulgated originally to protect society."

"On the basis of modern medical knowledge, however, these laws have been found to run counter to that purpose. Medicine can now partially or completely control 80% of all seizures; we now know that heredity plays little or no role in the development of epilepsy; and we know that epilepsy is unrelated to mental deficiency. The time has now come to bring state laws into harmony with modern medical knowledge and advances."

The committee presented a "blue-print" for new laws affecting epilepsy to be used in a proposed nation-wide campaign.

Science News Letter, December 25, 1954

There are more than 80,000 species of snails.

ASTRONOMY

Jupiter High in the East

Although there are 20 stars of first magnitude in the heavens, only 15 of these can be seen from the Northern Hemisphere, of which seven are now visible.

By JAMES STOKLEY

► **SHINING BRIGHTER** than any other planet or any star now visible, Jupiter is a conspicuous object in the east on January evenings.

It stands in the constellation of Gemini, the twins, as shown on the accompanying maps. These depict the sky as it appears about 10:00 p.m., your own kind of standard time, at the beginning of January, an hour earlier at the middle and two hours earlier at the end.

The part of the sky where Jupiter is now seen hardly needs the added glory, since this general region contains more bright stars than any similar area. In all the sky there are only 20 stars as bright as the first magnitude on the astronomical scale of brilliance, and five of these cannot be seen from most parts of the United States.

Of the 15 that we can see, seven, or nearly half, are now visible in the southeast. Among these is the brightest of all, Sirius, the dog-star, in Canis Major, the larger dog.

Orion Easily Recognized

Above Sirius, to the right, is the figure of Orion, the warrior, easily recognized by the three stars (not of the first magnitude) that form his belt.

Below the belt is a bright star called Rigel, in Orion's foot, and above it another, Betelgeuse, which is in one of his shoulders. Still higher and farther right we come to Taurus, the bull, in which Aldebaran shines, marking the animal's eye.

Almost overhead (shown on the map of the northern sky) stands Capella, in Auriga, the charioteer. Below this, toward the east, are Gemini, the twins, with the stars Castor and Pollux, the latter of first magnitude.

Between Pollux and Sirius is Procyon, in Canis Minor, the smaller dog. And between Pollux and Procyon is Jupiter, more brilliant than any of them.

In addition to these seven, two other stars of the first magnitude are indicated on our maps, although both are so low in the sky that much of their light is absorbed by the earth's atmosphere and they appear considerably fainter than when they are higher in the sky.

One is Regulus, in Leo, the lion, visible low in the east, which will become more conspicuous in evenings of late winter and spring. The other is Deneb, in the west, all that can be seen of Cygnus, the swan, about to disappear from the evening skies until late spring.

Also, another planet is visible, but it also has faded from its brightness of a few months ago, even though it still equals a star of the first magnitude.

The planet is Mars, in Pisces, the fishes, just south of the four stars that form the "Great Square" in the group of Pegasus, the winged horse.

In addition, it may be possible to catch a glimpse of Mercury, nearest of all the planets to the sun, at the end of the month as it reaches a position farthest east of the sun on Jan. 28, and remains in the western evening sky for a short time after sunset.

Two other planets can be seen in the early morning sky. At about 4:30 a.m. at the beginning of January, Saturn rises in the east, in Libra, the scales. It is brighter than Mars.

Venus Very Bright

A little later—about two hours ahead of the sun—Venus appears, in Ophiuchus, the serpent-holder.

Of magnitude minus 4.2, this is about 11 times as bright as Sirius, or more than six times the brilliance of Jupiter.

Although most of the brighter stars, and some fainter ones, have proper names, the astronomer seldom uses them. He has other designations, often merely a number in a star catalog.

However, the names have considerable interest and reflect, in many cases, the development of the science of astronomy. Many of them are derived from the Arabic. During the dark ages in Europe, the Arab countries maintained an interest in the study of the stars, and it was from the Arabs that much of this lore later came back into European knowledge.

As did other early peoples, these Arabs imagined the stars arranged in groups, representing figures, animals, etc., and when they wanted to designate a certain star, they would give it a name that described its position in the figure.

The group we call Orion they also saw as a giant and, because of its prominent position, they called it "Al Jauzah," meaning "the central one."

Consequently, the star marking his shoulder they called "Ibt al Jauzah," which means "the armpit of the central one." In the course of the ages, this name was corrupted and finally came down to our present "Betelgeuse."

Names Corrupted by Time

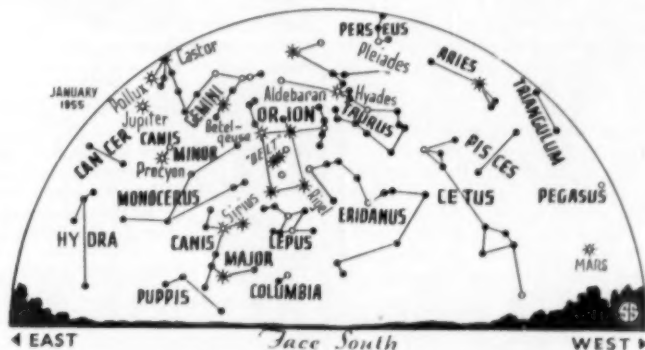
Similarly, the second brightest star in this group was called "Rijl Jauzah al Yusra," or "the left leg of the central one." In this case, only the first word of the whole name, with spelling altered to Rigel, has come down to modern times.

The name Sirius, however, is not Arabic, but comes from a Greek word meaning "sparkling," applied on account of the brilliance of this star.

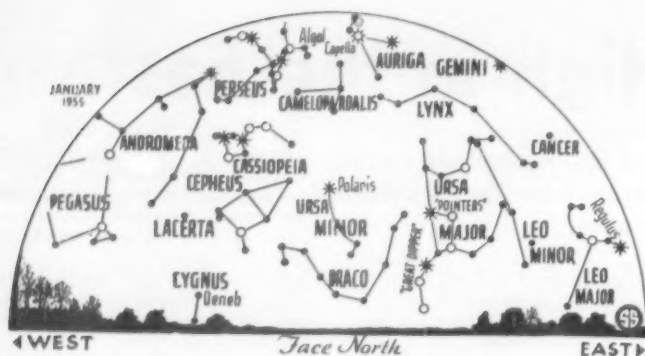
Procyon has a similar origin. It comes from a Greek word meaning "before the dog," which refers to the fact that it rises ahead of Canis Major. Capella, on the other hand, is Latin and means "the little she-goat."

The name of Aldebaran for the star marking the eye of Taurus is Arabic, as one might guess from the first two letters of the name. "Al" is the Arabic article "the" and most star names that begin with these letters have an Arabic origin.

The original form of the name was only slightly different—"Al Dabaran"—which means "the follower." A little to the west is a cluster of fainter orbs known as the Pleiades, which have always attracted great attention and, as this star followed them across the sky, it was so named.



◊ * ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS



Deneb likewise is Arabic and means "the tail," since it is in the tail of the swan. However, its full name, to the Arabs, was "Al Dhanab al Dajjah," or "the hen's tail," for they made it a different bird.

Regulus sounds Latin, and indeed it is, meaning "a little king." This has been applied to it because it was supposed, according to the superstitious beliefs of the old astrologers, that it ruled the affairs of the heavens.

The Romans themselves called it "Cor Leonis," or the heart of the lion, and this was adopted by the Arabs, translated as "Al Kalb al Asad," but this has not survived as Aldebaran did.

Pollox also is Latin, the name of one of the twins who were favorite Roman gods, especially among the sailors.

Celestial Time Table for January

Jan. EST

- 1 3:29 p.m. Moon in first quarter.
- 2 2:30 a.m. Algol (variable star in Perseus) at minimum brightness.

- 4 7:00 a.m. Earth nearest sun; distance 91,342,000 miles.
- 6 4:00 a.m. Moon nearest earth; 225,600 miles.
- 7 8:08 p.m. Algol at minimum.
- 8 7:44 a.m. Full moon.
- 10 10:21 p.m. Moon passes Jupiter.
- 10 4:57 p.m. Algol at minimum.
- 15 3:00 p.m. Jupiter in opposite direction from sun and nearest earth; distance 395,400,000 miles.
- 5:13 p.m. Moon in last quarter.
- 17 10:00 p.m. Moon farthest distance 251,600 miles.
- 10:25 p.m. Moon passes Saturn.
- 19 6:38 p.m. Moon passes Venus.
- 23 8:06 p.m. New moon.
- 25 1:01 a.m. Algol at minimum.
- 10:00 a.m. Venus farthest west of sun.
- 27 9:50 p.m. Algol at minimum.
- 28 3:00 a.m. Mercury farthest east of sun.
- 11:37 p.m. Moon passes Mars.
- 30 6:39 p.m. Algol at minimum.
- 31 12:05 a.m. Moon in first quarter.

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, December 25, 1954

MEDICINE

Enzyme Might Help in Polio If Vaccine Fails

► IF VACCINATION by the Salk vaccine or some other fails to stop polio, there is a new chemical treatment that might provide speedier and more complete recovery to victims of the disease.

Good results with this treatment, in trials in a small number of cases, were reported by Dr. George J. Boines, chief of communicable diseases and poliomyelitis at Wilmington General and St. Francis Hospitals, Wilmington, Del., at the meeting of the Delaware Academy of General Practice.

The treatment Dr. Boines used toward the end of last summer's polio season consisted of injections into the muscles of a solution of purified trypsin in sesame oil. Trypsin is a digestive enzyme secreted by the pancreas. It has anti-inflammation properties but has been considered unsafe for internal use until recently.

Trypsin can be given safely, recent reports show, if used in very small quantities and injected into muscles instead of into the blood stream directly.

Its effect in polio presumably would come through its ability to reduce edema, or watery swelling. This edema, if occurring in the central nervous system, could play a big part in causing the paralysis of polio, Dr. Boines pointed out. If enzyme treatment could reverse this swelling fast enough, it might prevent paralysis.

In Dr. Boines' patients, progression of paralysis was apparently arrested after 48 hours of the enzyme treatment. "Most significant," he said, "was the return of muscle strength in these patients."

The number of patients treated was too small, he pointed out, to be sure of its value, but he thinks it worth further trial.

The trypsin preparation he used is marketed under the trade name Parenzyme.

Science News Letter, December 25, 1954

DERMATOLOGY

Winter Weather Effects

► WINTER WEATHER damage to the skin starts most cases of "housewives' hands," Dr. Matthew J. Brunner of Northwestern University, Chicago, charged at the meeting of the American Academy of Dermatology and Syphilology in Chicago.

Soap, detergents, dust, solvents and other materials the housewife handles every day play their part. But when Dr. Brunner tried to pin the trouble down on a single irritant by having women soak their hands in a detergent solution, he found it could only be done in the winter. In the summer, women's hands remained free of eczema even when soaked in the detergent.

Very small cracks, called fissures, in the skin in winter apparently are what pave the way for the irritating substances to cause the skin trouble.

"When the path of the detergent through the skin was followed," Dr. Brunner explained, "it was seen that it did not seep or permeate through the laminated stratum

corneum (the horny top layer of skin), but that it quickly gained entrance through the minute fissures seen on the hands in winter-time dried out, cracked, chapped skin.

"Thus, one may say that the physical barrier offered by a continuous coherent stratum corneum is of paramount importance, rather than its alkali-neutralizing power."

This outer layer of skin, together with sebum, a fatty excretion on the skin, appears to have acidic groups that neutralize alkali. If the outer layer of keratin becomes thinner than usual or the sebum is reduced in quantity, the alkali-neutralizing power will be limited and the skin will have poor resistance.

However, Dr. Brunner points out that this, of itself, cannot be a universal cause of eczema because it does not account for damage inflicted by acids, fat solvents, turpentine and neutral agents.

Science News Letter, December 25, 1954

MEDICINE

Antibiotic From Germs in Wax Moths

► DISCOVERY OF a new antibiotic, or anti-germ chemical like penicillin, is announced by Drs. T. Valyi-Nagy, J. Uri and I. Szilagyi of the University of Debrecen, Hungary, in *Nature* (Dec. 11).

The antibiotic has been named primycin. It is made by microorganisms found in the larvae of the wax moth, *Galleria melonella*. Primycin seems to be active against viruses as well as against such larger organisms as the staphylococci that cause boils.

Good results in treating superficial infections in man are reported by the Hungarian scientists. However, the new antibiotic may have limited usefulness since trials in animals showed it to be toxic. Consequently it has only been used for superficial infections in humans and may never get beyond that kind of use.

Science News Letter, December 25, 1954

ENTOMOLOGY

Mosquito War Chemicals

► FUTURE GENERATIONS of mosquitoes that light on man to enjoy a good meal are in for a surprise. A U.S. Department of Agriculture entomologist reported to the Entomological Society of America meeting in Houston, Tex., the discovery of 11 new mosquito-repelling chemicals.

Dr. Carroll N. Smith described all of them as superior against one or more species of mosquitoes to repellents now being used.

One of the new compounds, designated 20218 and known chemically as N,N-diethyl-m-toluamide, showed remarkable repelling qualities to the malaria, yellow-fever, glades, and two species of the salt-marsh mosquitoes, Dr. Smith stated.

When spread on a man's arm, 20218 prevented bites from the yellow-fever mosquitoes for four hours. Presently used standard military repellents protect a man for only one and one-half hours against the same pest.

In further tests, it was found that the bites of the salt-marsh mosquitoes could be prevented for four and one-half hours by applying 20218, whereas standard repellents gave protection for only two and one-half hours. Against the glades mosquitoes, protection was effective for nearly two hours, or one-half hour more than repellents now used.

In tests for protection against the malaria mosquitoes, 20218 proved superior to all other test repellents, and equaled the repellency of standard repellents, the entomologist claimed.

Dr. Smith stated that it is not likely the repellents be available to the public in the near future. Although the new chemicals appear to be safe to use on the skin, further testing is necessary. The research was carried on with funds from the Department of Defense.

Science News Letter, December 25, 1954

GEOPHYSICS

Sunspot Cycle Minimum

► THE LOW point in the 11-year sunspot cycle was reached last April, radio experts at the National Bureau of Standards have now been able to calculate.

Because of the way the sun's activity is measured, known as the "smooth sunspot number," it takes seven months to learn when sunspots are at minimum or maximum. The smooth sunspot number is an average of two 12-month averages.

This numerical index for March, 1954,

was 4.1. In April, it dropped to 3.2, then turned up to 3.4 in May.

The sunspot number for each month is obtained by averaging, according to an internationally-used formula, the number of sunspots seen on the sun each day.

There is a definite relation between the abundance of sunspots and changes in the earth's magnetic field. Irregularly, sudden and violent disturbances in this field, known as magnetic storms, occur.

During such storms, users of shortwave radio for long-distance communications are plagued by bad reception and, sometimes, by complete black-outs. Displays of "northern lights," or aurora borealis, are often seen at these times and, occasionally, currents of electricity induced about the earth can interfere with telegraph and telephone communications.

When sunspots are at a minimum, the number of such storms is considerably reduced and, often, weeks will pass without any of the serious ionospheric disturbances that hamper long-distance communications, particularly by shortwave radio.

The storms that do occur at sunspot minimum, however, usually last much longer than those at sunspot maximum, when the disturbances are apt to be short and very intense, according to some scientists who specialize in forecasting such storms.

Forecasts of shortwave radio reception are made by radio experts of the Central Radio Propagation Laboratory of the National Bureau of Standards, with headquarters in Boulder, Colo., for the North Atlantic region at Ft. Belvoir, Va., and for the North Pacific area at Anchorage, Alaska.

Science News Letter, December 25, 1954

DERMATOLOGY

Cut Cost of Treatment With Hydrocortisone

► TREATMENT OF skin diseases with the famous adrenal gland hormone chemical, hydrocortisone, can be less expensive and just as effective if the chemical is applied locally in a lotion or in a salve, Dr. Harry M. Robinson Jr. of the University of Maryland School of Medicine, Baltimore, reported at the meeting of the American Academy of Dermatology and Syphilology in Chicago.

In a two-year study of 1,566 patients conducted with his collaborators, Drs. R. C. V. Robinson and John G. Strahan, Dr. Harry Robinson has found that the local application has great value in producing temporary remission of symptoms in cases of housewives' dermatitis of the hands, atopic dermatitis, neurodermatitis, allergic contact dermatitis, stasis dermatitis, pruritus ani and pruritus vulvae.

After the symptoms in 60% to 90% of the cases of responsive dermatoses were relieved, depending on the kind of lotion or salve used, this relief was maintained by applications varying from twice a day to every other day or by reducing the concentrations of hydrocortisone.

"The oily base ointments proved to be superior to greasless base creams for dispensing the steroid because they were less irritating and also because a smaller quantity of oily base covers a larger surface area," Dr. Robinson explained.

"The addition of antibiotics," Dr. Robinson said, "did not alter the effect of the steroid and had the additional therapeutic advantage of combating secondary pyogenic (pus) infection."

Science News Letter, December 25, 1954

New and Different

**Optical
Radioactivity
Detector!**

GEIGERSCOPE

Designed for the research chemist, physicist, plant and safety engineer, educator and industrialist. Now in use in hundreds of laboratories in industry, atomic energy plants and major universities. More sensitive for use on radioactive samples or mineral specimens than any portable electronic instrument, regardless of price. Sturdy, durable, portable as a pocket watch. Requires no power source because it converts the energy of alpha rays directly into visible signals. Has no background count from potassium feldspar or cosmic rays. 30 power magnification. Will readily detect and measure any alpha-active isotope down to the range of a millionth of a microcurie. Detects contamination of air, surfaces, hands, apparatus not revealed by conventional instruments. Extends your measurement range. Invaluable for anyone interested in radioactivity. Supplied complete with calibrated radium standard, uranium ore sample, direction sheet and air-tight holster. Sold by mail only. UNCONDITIONAL WRITTEN GUARANTEE. Send check or money order to

KEN RESEARCH SALES 481 MAIN STREET, HACKENSACK 3, N. J.



PROFESSIONAL MODEL

\$5

POSTPAID

Books of the Week

HORTICULTURE

Shade Trees Threatened By Bulldozer Blight

► SHADE TREES in new communities are succumbing to what Dr. Rush P. Marshall, director of the Bartlett Tree Research Laboratories of Stamford, Conn., has termed "bulldozer blight."

"The blight is decline and death of trees that home owners thought would give them shade long years to come, and the bulldozer is the indirect cause," Dr. Marshall reported to the Connecticut Forest and Park Association in New Haven, Conn. Shade trees on land bought for housing development look fine for a while, but in one to five years many of the trees die, he stated.

The Connecticut scientist pointed out that the bulldozer blade removes the top soil around the trees, depriving the plants of vital food sources as well as ripping up feeding roots.

In addition, the heavy machine packs the soil so tightly that it takes years for such packed soils to recover. This mechanical injury is often coupled with the construction of fills, that change the water table and suffocate the surviving roots.

Bulldozer blight can easily be prevented, Dr. Marshall said, if the heavy machinery is kept away from the trees and if the undergrowth beneath an existing tree is cleared away by hand. If fills are necessary, he advised, wells with proper drainage should be provided around the base of the trunk.

Science News Letter, December 25, 1954

For the editorial information of our readers, books received for review since last week's issue are listed. For convenient purchase of any U. S. book in print, send a remittance to cover retail price (postage will be paid) to Book Department, Science Service, 1719 N. Street, N.W., Washington 6, D. C. Request free publications direct from publisher, not from Science Service.

ADRENAL FUNCTION IN INFANTS AND CHILDREN: A Symposium—Lyt I. Gardner, Ed.—*State University of New York*, 112 p., paper, \$1.00. The editor points out that the scientific worker in this field can quite properly be looked upon as a creative artist. Abstracts in Interlingua are included.

THE BOMB, SURVIVAL AND YOU: Protection for People, Buildings, Equipment—Fred N. Severud and Anthony F. Merrill—*Reinhold*, 264 p., illus., \$5.95. Designed to show that it is possible to plan and to take action to protect yourself and your family from the effects of bombings.

THE CHEMISTRY OF PETROLEUM HYDROCARBONS Volume I—Benjamin T. Brooks and others, Eds.—*Reinhold*, 664 p., illus., \$18.00. An important reference work for chemists and petroleum engineers.

THE CITY OF HOPE—Samuel H. Golter—*Putnam's*, 177 p., illus., \$3.50. Describing a large sanatorium in California originally intended for tuberculosis patients, but now treating victims of cancer and heart trouble as well.

EXISTENCE THEOREMS FOR ORDINARY DIFFERENTIAL EQUATIONS—Francis J. Murray and Kenneth S. Miller—*New York University Press*, 154 p., \$5.00. Presenting mathematical theories necessary for the understanding use of analog electronic "brains."

FOOD ACCEPTANCE TESTING METHODOLOGY: A Symposium Sponsored by the Quartermaster Food and Container Institute—David R. Perryam, Francis J. Pilgrim, and Martin S. Peterson, Eds.—*National Academy of Sciences-National Research Council*, 115 p., illus., paper, free upon request to Quartermaster Food and Container Institute, 1819 West Pershing Road, Chicago 9, Ill. Of interest to those concerned with buying food on a large scale.

HOW TO BE A SUCCESSFUL TEEN-AGER—William C. Menninger and others—*Sterling*, 256 p., illus., \$2.95. A noted psychiatrist offers help to young people on their personal problems.

HOWARD W. SAMS AUTO RADIO MANUAL—Howard W. Sams, illus., paper, \$3.00. Covering 1953 and 1954 models and their servicing.

RELATIVITY FOR THE LAYMAN: A Simplified Account of the History, Theory, and Proofs of Relativity—James A. Coleman—*William-Fredrick*, 131 p., illus., \$2.75. An instructor in physics and astronomy at Connecticut College here attempts to make a difficult theme clear to the layman.

Understanding Yourself

By Dr. Ernest R. Groves

This inspirational book, now in its well-merited 8th printing, has helped thousands to live more wisely, more fully, more happily, more effectively—in the best sense, more profitably; for a thorough understanding of self is the very bedrock foundation on which to build for peace of mind and sound mental health.

"The attempt of the book is to provide means by which the reader can come to a better understanding of himself. All emphasis is on the utilization of one's mental and physical equipment in such a way that happiness and serenity may be realized."

Scientific Book Club.

\$5.00 Postfree • 5-Day Money-Back Guarantee

EMERSON BOOKS, Inc., Dept. 285-K

251 W. 19th St., New York 11

THE SCIENTIFIC REVOLUTION 1500-1800: The Formation of the Modern Scientific Attitude—A. R. Hall—*Longmans, Green*, 390 p., illus., \$3.50. By a lecturer in the history of science at Christ's College, Cambridge, where so much of the scientific revolution took place.

TOTATI: Paraguayan Town—Elman R. Service and Helen S. Service—*University of Chicago Press*, 337 p., illus., \$7.00. An anthropologist couple present this study of a small town in far away Paraguay, a country about which pitifully little is known in this part of the world.

WALT DISNEY'S LIVING DESERT: A True-Life Adventure—Jane Werner and the Staff of the Walt Disney Studio—*Simon and Schuster*, 124 p., illus., \$2.95. The story of a famous motion picture with gorgeous pictures in color from the film.

WALT DISNEY'S 20,000 LEAGUES UNDER THE SEA—Elizabeth Beecher from the original story by Jules Verne—*Simon and Schuster*, 64 p., illus., \$1.00. An old classic presented in a new form to delight a new generation of readers.

WANTED — YOUR MAGIC—Joan Gray—*National Association for Mental Health*, 16 p., illus., paper, 10 cents. Showing in brief text and drawings how volunteers can help the mentally ill to recover.

YOUR CANARY—William W. Denlinger—*Denlinger's* 24 p., illus., paper, 60 cents. Written for those who are considering the purchase of a canary.

Science News Letter, December 25, 1954

BIOCHEMISTRY

Protection From Radiation

► PROTECTION AGAINST radiation injury and death, including perhaps that from atom bombs, may come from an alcohol found in yellow bone marrow.

The alcohol is called batyl alcohol. It has also been made synthetically. Its potential effectiveness as a remedy for A-bomb and other radiation damage appears in two reports in *Nature* (Dec. 11).

The reports state that:

1. Patients suffering from too few white blood cells as a result of radium and X-ray treatments were helped by a preparation containing batyl alcohol and related chemicals (alkoxyglycerols and their esters).

2. White mice were saved from radiation death by injections, two hours after radiation exposure, of batyl alcohol.

The patients got the batyl alcohol and related chemicals in a concentrate that they took by mouth. Of the 36 studied so far, 25 responded to the treatment by an immediate increase in white blood cells. In nine, there was no increase but neither was there any further decrease in white cells. Only two continued to have decreases in white cells.

A "striking effect" of the treatment appeared in a nurse who had worked in ra-

dium treatment for some years and who had the low white blood cell count of about 2,000.

After four days of treatment with the alkoxyglycerol ester concentrate, her white count had gone up to 3,600. It stayed at this level for five months with only one additional treatment of four days. Then a third course of four days of treatment was given and her white count went to 4,200.

In the studies with the white mice, 13 of 30 survived radiation treatment for 30 days when given batyl alcohol, compared to only four out of 30 untreated animals. The difference is statistically significant, states Dr. T. Edlund, University of Uppsala, Sweden, in his report of the mouse studies.

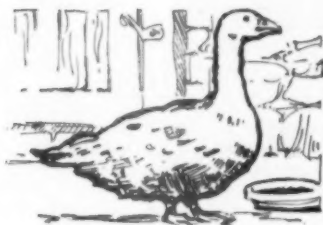
The studies of patients were made by Drs. Astrid Brohult of Radiumhemmet, Stockholm, and Dr. John Holmberg of the Forskningslaboratoriet LKB at Appelviken, Sweden.

These scientists call the treatment "promising" against the white blood cell anemia caused by irradiation and state that the chemicals "might also give a more general protection of the blood-forming tissues against radiation damages."

Science News Letter, December 25, 1954

ZOOLOGY

NATURE RAMBLINGS



Christmas Goose

► CHRISTMAS, COMING so soon after Thanksgiving, is rather hard on the poultry population. Many thousands of turkeys that escaped the late November massacre have lost their lives during the past few days and weeks, and sizzled on Christmas platters.

Although turkeys are popular for the holiday feast, the Christmas goose is coming back into its own. Long before America was discovered, and with it the turkey, the goose held undisputed sway as the bird of the day at Christmas and other festive seasons.

Even where turkeys are abundant, there are many who prefer goose, for its liberal natural larding makes it easier to roast and also makes the stuffing tastier.

As the turkey is the most recent addition to the poultry yard, the goose was probably its first inhabitant, though possibly the duck

might claim that honor. Both duck and goose, as well as the common barnyard hen, were man's domestic companions long before the dawn of written history.

The goose especially has had the esteem of primitive peoples, who dedicated it to one or another of their pagan gods. Even people so civilized as the Romans considered the goose sacred to Juno; the legend of the saving of the city by the alarmed cries of her flock at midnight is a well-known one.

In the old-world rural economy, the goose was as useful a bird as the hog was an animal. Nothing but the bones and the beak were thrown away. And the goose is still one of the most completely usable of all our domestic animals. Besides yielding a great lump of meat upon its involuntary demise, it gives us quantities of huge eggs before that event.

In the old days, the fat of the Christmas goose also used to yield a pot of "goose grease," sovereign remedy for colds in the chest, aches and pains, or whatever else ailed you, and the fat was good in cooking as well as in medicine.

The goose supplies whole snowstorms of feathers and down for cushions and old-fashioned feather-beds, and can be plucked alive without apparent inconvenience. If you travel in the Rhine country, you will at first be nearly smothered at night, for you will not merely sleep on a feather bed, you will sleep under one.

Finally, the heavy quills of the goose's wings were instruments of both peace and war, for they guided the shafts of the archers and formed the quills of the clerks. Whole wing-ends with feathers still affixed made excellent hearthbrushes. And even the bones became meteorological instruments.

The goose has been falsely defamed as a foolish bird, but it really is not.

Science News Letter, December 23, 1954

VETERINARY MEDICINE

Foot-and-Mouth Disease

► FOOT-AND-MOUTH DISEASE, the dread virus that means slaughter for infected cattle, has been transmitted by inoculation to young chicks in the laboratory. Heretofore, it was believed that domestic and wild fowls were resistant to the foot-and-mouth disease.

Recovery of the virus from the blood and the characteristic lesions of the tongue in both newly-hatched chicks and birds from two to four months old were found by H. H. Skinner of the Research Institute (Animal Virus Disease) at Pirbright, Surrey, England.

Young chicks were inoculated with the virus intramuscularly, and chick embryos intravenously, with strains of the disease taken from cattle, mice and guinea pigs.

The scientist, who reports his findings in *Nature* (Dec. 4), states that in chickens of all ages, there was no severe systemic disturbance in the course of the infection. The

affected tongue tissue usually was flaked off in one or two days and the tongue left without a blemish.

Both the cardiac and skeletal muscles of the chicks inoculated in the embryo stage were observed to show signs of the infection, as is the case in the infection of the young of many species, Mr. Skinner states.

The English scientist also reports a successful attempt to infect chick embryos seven to ten days old with the virus of vesicular stomatitis, a disease with symptoms similar to those of foot-and-mouth disease.

"A repetition of the methods used for infecting chickens with the virus of foot-and-mouth disease showed that adult and young birds were highly susceptible to infection with the virus of vesicular stomatitis when this was inoculated intradermally into the tongue," Mr. Skinner reports.

Science News Letter, December 23, 1954

GENERAL SCIENCE

Haskins Is Elected Carnegie's President

► DR. CARYL P. Haskins, president and director of research of Haskins Laboratories, New York, was elected president of the Carnegie Institution of Washington at the annual meeting of its Board of Trustees in Washington.

Dr. Haskins will succeed Dr. Vannevar Bush when he retires on Jan. 1, 1956.

Dr. Haskins, a biophysicist and geneticist, was born in Schenectady, N. Y., in 1908. He received his bachelor's degree from Yale in 1930, and his Ph.D. from Harvard in 1935.

The Haskins Laboratories is a non-profit scientific and educational foundation.

Science News Letter, December 23, 1954

Questions

ASTRONOMY—How many first magnitude stars are visible from the Northern Hemisphere? p. 407.

□ □ □

GEOPHYSICS—When was minimum reached in the 11-year sunspot cycle? p. 409.

□ □ □

MEDICINE—What steps can be taken now to avoid heat stroke next summer? p. 406.

What might be used against polio if vaccines fail? p. 408.

□ □ □

OPHTHALMOLOGY—How can the way you read give clues to your personality? p. 404.

□ □ □

PLANT PATHOLOGY—What new disease is plaguing holly growers? p. 406.

□ □ □

Photographs: Cover and p. 403, Carnegie Institution of Washington; p. 405, Hubert W. Frings; p. 412, Bakelite Company.

- Specimen Slides
- Microscopes
- Oculars—Stains
- Microscope Illuminators
- Mechanical Stages
- Objectives
- Mounting Media
- Microscope Parts



SPECIALIZED EQUIPMENT

Our complete stock of Specialized Equipment is designed to meet the precision needs of science and industry.

USED EQUIPMENT PURCHASED

Write today to Dept. NWL for our Illustrated Microscope & Telescope Catalog & Price List.

BENJAMIN MILLER

134 W. 32 St., N. Y. 1, N. Y.

PE. 6-8384

• New Machines and Gadgets •

For sources of more information on new things described, send a self-addressed stamped envelope to SCIENCE NEWS LETTER, 1719 N St., N.W., Washington 6, D. C., and ask for Gadget Bulletin 758. To receive this Gadget Bulletin without special request each week, remit \$1.50 for one year's subscription.

❁ **EXTENSION RULE** has a unique brass slide that is graduated in 16ths for inside measurements. This six-foot rule has square ends and opens to even numbers only.

Science News Letter, December 25, 1954

❁ **SYNTHETIC TARPAULIN** is a combination of two man-made materials, nylon and neoprene synthetic rubber. The material is described as non-shrinkable, completely waterproof, mildew resistant in storage, and one-half the weight of #8 duck tarpaulin.

Science News Letter, December 25, 1954

❁ **ADDING MACHINE** imported from Sweden combines all the features of a standard ten-key adding machine with a new automatic multiplier, as well as an optional stepover feature. The machine is on rubber rollers that permit it to be rolled out of the way when not in use.

Science News Letter, December 25, 1954

❁ **RADIATION-CONTAMINATION DETECTOR** is an inexpensive and simple device for determining in a matter of seconds if food and water supplies have been contaminated following an atomic blast. The device consists of a uranium-mixture comparison standard that emits a known quantity of beta-gamma radiation. It is expected to find its widest use by hospitals, water companies and civil defense units.

Science News Letter, December 25, 1954



❁ **BUBBLE LAMP**, which is made of plastic and is inflatable, comes in a complete put-it-together-yourself kit. When assembled, this new lamp hangs in mid-air, as shown in the photograph. It can be lowered or raised to any desired height simply by pulling on the lamp's own cord. The shade blows up to 20 inches in diameter and 10 inches deep.

Science News Letter, December 25, 1954

❁ **BOWLING SET** that Junior can blow up and use in the parlor without damaging the walls or furniture is made of plastic. The brightly colored ball and ten-pins are light and flexible. A miss or strike on the living room alley is harmless.

Science News Letter, December 25, 1954

❁ **PRESSURE-SENSITIVE ADHESIVE**, when applied to paper, leather, metal, plastic or other surfaces, makes the coated material self-adherent. Tapes, labels, signs and decorative fabrics can be made self-sticking simply by applying the transparent-drying adhesive with brush or machine.

Science News Letter, December 25, 1954

❁ **AUTOMOTIVE AIR** conditioner for summertime motoring comfort is set in an under-dash housing. Automatically holding in-car temperatures in the 70-degree range, this air conditioner provides up to 365 cubic feet of refrigerated air per minute at high or low speeds, in 100-degree-plus weather.

Science News Letter, December 25, 1954

Do You Know?

Baby kangaroos are only about an inch long at birth.

Nine out of 10 children with cross-eyes can be cured without surgery if they get the proper care at the right time.

The water temperature drops 10 to 20 degrees when passing from the water heater to the electric clothes washer.

At Chicago, the range between high and low tide in Lake Michigan is less than two inches.

It takes 42 gallons of water to produce a pound of rubber, and 1,000 gallons to make a pound of rayon.

Certain wasps, which make paper-like substances for their nests, are considered the first paper manufacturers.

Anthrax can attack any warm blooded animal; but humans, canines and swine have the highest resistance to the disease, and cattle, horses and sheep are the most susceptible.

The nutria, a South American furbearer and an aquatic mammal, has mammary glands on its sides instead of its stomach so it can nurse its young while partially submerged in the water.



BIND and SAVE Your SNL Copies

With SCIENCE NEWS LETTER stamped in gold on front and spine, this excellent buff buckram binder costs \$2.50 postpaid. Snap new issues into the cover with a little unbreakable hooked wire. Remove any issue you desire and reinsert it just as easily. The binder holds 26 copies, opens freely, allows pages to lie flat, is strong enough to last for years.

BINDER

To: Science News Letter, 1719 N St., N.W., Washington 6, D. C.

Send me.....SNL binders at \$2.50 each, postpaid. My name is imprinted to the left.

12-25-4